We claim:

1. A sustained release pharmaceutical formulation comprising an antihyperglycemic drug or a pharmaceutically acceptable salt thereof, wherein said formulation provides therapeutic plasma levels of said antihyperglycemic drug to a human patient over a 24 hour period after administration to said patient.

2. The sustained release pharmaceutical formulation of claim 1 wherein said administration is with or shortly after the evening meal.

3. The sustained release pharmaceutical formulation of claim 1 wherein the bioavailability of the antihyperglycemic drug is increased by the presence of food.

4. The sustained release pharmaceutical formulation of claim 1 wherein said formulation provides a T_{max} of the antihyperglycemic drug which occurs at a time from about 8 hours to about 12 hours after administration to said human patient.

5. The sustained release pharmaceutical formulation of claim 1 wherein said antihyperglycemic drug is metformin.

6. A sustained release pharmaceutical formulation comprising a dose of metformin or a pharmaceutically acceptable salt thereof suitable for once daily dosing, said formulation providing a T_{max} of the metformin which occurs at a time from about 8 hours to about 12 hours after administration to a human patient.

7. The sustained release pharmaceutical formulation of claim 6 wherein said administration is with or shortly after the evening meal.

8. A sustained release pharmaceutical formulation comprising metformin or a pharmaceutically acceptable salt thereof, said formulation suitable for once daily dosing and providing a peak of a mean plasma concentration/time curve of metformin at a time from about 4 hours to about 10 hours after administration.

9. A sustained release pharmaceutical formulation comprising a dose of metformin or a pharmaceutically acceptable salt thereof suitable for once daily dosing, said formulation when administered with or after a meal to a human patient, providing a C_{max} of metformin from about 52.8% to about 75.1% of the C_{max} provided by an equivalent dose of metformin in an immediate release reference formulation.

10. The sustained release pharmaceutical formulation of claim 9 wherein said formulation provides a T_{max} of the metformin which occurs at a time from about 8 hours to about 12 hours after administration to said human patient.

11. The sustained release pharmaceutical formulation of claim 9 wherein the bioavailability of the drug is increased by the presence of food.

12. A sustained release pharmaceutical formulation comprising a dose of metformin or a pharmaceutically acceptable salt thereof suitable for once daily dosing, said formulation when administered with or after a meal to a human patient, providing a T_{max} of metformin from about 182% to about 200% of the T_{max} provided by an equivalent dose of metformin in an immediate release reference formulation.

13. The sustained release pharmaceutical formulation of claim 12 wherein said formulation provides a T_{max} of the metformin which occurs at a time from about 8 hours to about 12 hours after administration to said human patient.

14. The sustained release pharmaceutical formulation of claim 12 wherein the bioavailability of the metformin is increased by the presence of food.

15. A sustained release pharmaceutical formulation comprising a dose of metformin or a pharmaceutically acceptable salt thereof suitable for once daily dosing, said formulation when administered in the fasted state to a human patient, providing a T_{max} of metformin from about 173% to about 215% of the T_{max} provided by an equivalent dose of metformin in an immediate release reference formulation.

16. The sustained release pharmaceutical formulation of claim 15 wherein said formulation provides a T_{max} of the metformin which occurs at a time from about 8 hours to about 12 hours after administration to a human patient.

17. The sustained release pharmaceutical formulation of claim 15 wherein the bioavailability of the metformin is increased by the presence of food.

18. A sustained release pharmaceutical formulation comprising a dose of metformin or a pharmaceutically acceptable salt thereof suitable for once daily dosing, said formulation upon administration to a human patient, providing a width at 50% of the height of a mean plasma concentration/time curve from about 6 hours to about 12 hours.

19. The sustained release pharmaceutical formulation of claim 18 wherein said formulation provides a T_{max} of the metformin which occurs at a time from about 8 hours to about 12 hours after administration.

20. The sustained release pharmaceutical formulation of claim 18 wherein the bioavailability of the metformin is increased by the presence of food.

21. A sustained release pharmaceutical formulation comprising a dose of metformin or a pharmaceutically acceptable salt thereof suitable for once daily dosing, wherein a single administration of said formulation provides a lower mean fluctuation index in the plasma than a single administration of a substantially equal dose of an immediate release composition of metformin.

22. The sustained release pharmaceutical formulation of claim 21 wherein said formulation provides a T_{max} of the metformin which occurs at a time from about 8 hours to about 12 hours after administration to a human patient.

23. The sustained release pharmaceutical formulation of claim 21 wherein the bioavailability of the metformin is increased by the presence of food.

24. A sustained release pharmaceutical formulation comprising a dose of metformin or a pharmaceutically acceptable salt thereof that exhibits the following dissolution profile when tested in a USP type 2 apparatus at 75 rpm in 900 ml of simulated intestinal fluid (pH 7.5 phosphate buffer) and at 37° C.:
after 2 hours 0-25% of the metformin or salt thereof is released;
after 4 hours 10-45% of the metformin or salt thereof is released;
after 8 hours 30-90% of the metformin or salt thereof is released;
after 12 hours not less than 50% of the metformin or salt thereof is released;
after 16 hours not less than 60% of the metformin or salt thereof is released;
and after 20 hours not less than 70% of the metformin or salt thereof is released.

25. The sustained release pharmaceutical formulation of claim 24 wherein after administration to a human patient, said formulation provides a bioavailability of metformin which is increased by the presence of food.

26. The sustained release pharmaceutical formulation of claim 24 wherein after administration to a human patient, said formulation provides a T_{max} of metformin which occurs at a time from about 8 hours to about 12 hours after said administration.

27. A sustained release pharmaceutical formulation comprising a dose of metformin or a pharmaceutically acceptable salt thereof that exhibits the following dissolution profile when tested in a USP type 2 apparatus at 75 rpm in 900 ml of simulated intestinal fluid (pH 7.5 phosphate buffer) and at 37° C.:
after 2 hours 0-15% of the metformin or salt thereof is released;
after 4 hours 20-40% of the metformin or salt thereof is released;
after 8 hours 45-90% of the metformin or salt thereof is released;
after 12 hours not less than 60% of the metformin or salt thereof is released;
after 16 hours not less than 70% of the metformin or salt thereof is released;
and after 20 hours not less than 80% of the metformin or salt thereof is released.

28. The sustained release pharmaceutical formulation of claim 27 wherein after administration to a human patient, said formulation provides a bioavailability of metformin which is increased by the presence of food.

29. The sustained release pharmaceutical formulation of claim 27 wherein after administration to a human patient, said formulation provides a T_{max} of metformin which occurs at a time from about 8 hours to about 12 hours after said administration.

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